

**PROSPECTUS**  
**FOR**  
**TELECOMMUNICATION EXPANSION PROJECT**

October, 1971

The Government of the Republic of Korea  
Seoul, Korea



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### Summary of the Project

1. Project Title : Telecommunication Expansion Project
2. Project Sponsor : The Ministry of Communication
3. - Estimated Fund Requirement :

Foreign Fund : US\$ 20,000,000

Local Currency: 9,593.4 Million Won

Total : 17,093.4 Million Won

4. Project Description

In spite of the successful completion of the 1st and 2nd Five Year Plans which has marked average annual 9.4% growth rate in 1961-1970, the needs of radical improvement in external economy has been revealed to be above all important.

In fact, 16.4% average annual growth rate shown in mining and manufacturing sectors was accompanied by a heavy concentration of population into urban areas. The urbanization in turn stimulated a pressing demand on telecommunication services.

The main stress for the successful performance of the 3rd Five-Year Economic Development Plan which requires a total amount of US\$ 13.5 billion for capital investment lies on the feasibility of solid infrastructures to be built up.

The basic objectives of the project which is a part of aggregate framework of foreign capital requirement US\$ 48



million for expansion of telecommunication facilities is to support the steady and balanced growth of economy between urban, industrial sectors and rural areas providing them with a minimum requirement of toll telephone and telegraph facilities.

### Overall Project Scheme

Unit: Thousand Dollar  
Million Won

<u>Project</u>	<u>Quantity</u>	<u>Local Cost (Won)</u>	<u>Import Cost (\$)</u>	<u>Total (Won)</u>
Coaxial cable carrier sys.	4,380 ch	2,571.6	4,225	4,156
Cable carrier sys.	4,104 ch	2,644.9	3,429	3,930.8
Open-wire carrier sys.	2,457 ch	2,221	2,157.8	3,030.2
PCM carrier sys.	4,416 ch	1,120.7	3,286	2,352.9
TG carrier sys.	1,740 ch	509.2	1,905	1,223.6
Scatter sys.	60 ch	137	1,000	512
Satellite comm. sys.	72 ch	116	1,200	566
Facsimile equip't	2,000 set	273	2,600	1,248
Contingency			197.2	73.9
<u>Total</u>		(Won) <u>9,593.4</u>	(US\$) <u>20,000</u>	(Won) <u>17,093.4</u>



5. Benefits of the project

- 1) The project will improve considerably various service efficiency i.e. inter-city communication traffic, modernization of rural communication media.
- 2) Especially, increased capacity due to introduction of the project may stimulate international trade.
- 3) The project is characterized by intent of enlarging or promoting domestic manufacturing of the project items.



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## I. Description of Project Sponsor

1. Project Title : Telecommunication Expansion Project

2. Project Sponsor :

1) Title : The Ministry of Communications (abbreviated as MOC)

2) Functions :

i) Under Article 91 of the Constitutional Law and Article 35 of the Government Organization Law, MOC administers and conducts management and operation of the following services :

a) Postal service

b) Postal money order, postal savings and postal pension

c) National life insurance

d) Telegraph and telephone service

e) Radio frequency control

ii) MOC is empowered to operate a monopoly of public telecommunication service by virtue of Article 3 of Telecommunication Law and Article 4 of Radio Regulation Law.

Private telecommunication is subject to authorization of MOC as is provided for in Article 60, 61 and 62 of Telecommunication Law and Article 4 of Radio Regulation Law.



### 3) Organization

The establishment is divided into three major echelons i.e. Headquarters, a number of Regional Administrative Offices and Offices under direct control of Headquarters and a great many of Field Offices. On top of them are the Minister who has the responsibilities of management and operation of the all business and activities of MOC, and his deputy, the Vice Minister.

Headquarters --- it is composed of the following executive functions in assisting the Minister and the Vice-Minister :

Office of Planning and Management deals affairs concerning overall basic policy, integration and coordination of budget, review and analysis of business operation, organizational and manpower control, international relations, audit and inspection, legal procedures and electronic data transmission system.

Bureau of Posts is assigned for operation of postal service, both domestic and overseas, postal money orders, postal savings and national life insurance.

Telecommunication Bureau is assigned for enactment of administrative regulations and procedures, tariff fixation, establishment of exchange areas and adjustment, conclusion of international treaty and demand forecast concerning telecommunication service.



Engineering Bureau is assigned for engineering, construction, enactment of engineering practices, maintenance and operation of telecommunication plant.

Accounting and Supply Bureaus are skipped.

Table of Organization shown in Table 1.

4) Manpower and number of offices

Number of employees totaled more than 40,000 and number of offices totaled 1,916 as of Jan. 1971.



ORGANIZATION, MINISTRY OF COMMUNICATIONS

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graph TD
    Minister[Minister] --> Sec1[Secretary]
    Minister --> PIO[Public Information Officer]
    Minister --> ViceMin[Vice-Minister]
    
    ViceMin --> Sec2[Secretary]
    ViceMin --> MDD[Management Research and Development Director]
    ViceMin --> SP[Security Planning]
    ViceMin --> DGPC[Director General, Planning & Coordination]
    
    MDD --> MA[Management Analysis]
    MDD --> TR[Technical Re-search]
    MDD --> CR[Customer Relations]
    
    DGPC --> PBE[Planning & Budgeting Executive]
    DGPC --> AME[Administrative Management Executive]
    DGPC --> AIE[Audit & Inspection Executive]
    DGPC --> ICO[International Cooperation Executive]
    DGPC --> LO[Legal Officer]
    DGPC --> RAO[Review & Analysis Officer]
    DGPC --> EPE[EDPS Planning Executive]
    
    PBE --- PSB[Postal Service Bureau]
    AME --- PSB
    AIE --- PSB
    ICO --- PSB
    LO --- PSB
    RAO --- PSB
    EPE --- PSB
    
    PSB --> PlanP[Planning]
    PSB --> PhilS[Philately service]
    PSB --> DMS[Domestic Mail Section]
    PSB --> IMS[International Mail Section]
    PSB --> FSI[Postal Savings & Insurance Section]
    
    PlanP --- TBB[Telecommunication Business Bureau]
    PhilS --- TBB
    DMS --- TBB
    IMS --- TBB
    FSI --- TBB
    
    TBB --> PlanT[Planning]
    TBB --> DSS[Domestic Service Section]
    TBB --> ISS[International Service Section]
    TBB --> OS[Operation Section]
    
    PlanT --- TEB[Telecommunication Engineering Bureau]
    DSS --- TEB
    ISS --- TEB
    OS --- TEB
    
    TEB --> TM[Traffic Management]
    TEB --> LLP[Long Lines Plant Section]
    TEB --> IPS[Inside Plant Section]
    TEB --> OPS[Outside Plant Section]
    
    TM --- FB[Finance Bureau]
    LLP --- FB
    IPS --- FB
    OPS --- FB
    
    FB --> PS[Property Section]
    FB --> AS[Accounting Section]
    FB --> CS[Cashiers Section]
    
    PS --- SB[Supply Bureau]
    AS --- SB
    CS --- SB
    
    SB --> GAP[General Affairs & Personnel Section]
    SB --> AdminS[Administration Section]
    SB --> SS[Supply Section]
    SB --> BCS[Building Construction Section]
    
    GAP --- RRB[Radio Regulatory Bureau]
    AdminS --- RRB
    SS --- RRB
    BCS --- RRB
    
    RRB --> SAC[Signal Communications Laboratory]
    RRB --> CTC[Communication Training Centre]
    RRB --> PL[Postal Laboratory]
    RRB --> ROC[Regional Communications Offices (7)]
    RRB --> CPSO[Central Procurement & Supply Office]
    RRB --> PSDO[Postal savings & Insurance Directorate Office]
    RRB --> PSSDO[Postal Savings Directorate Offices (2)]

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## II. Contents of the Project

### 1. Background

The year 1970 was to be remembered as a significant milestone established in the history of telecommunications. A voluminous investment project was accomplished. Among others were the the extension of 62,500 line units of local telephone, 2,041 channel of long lines and 30 channel telegraph circuits. The highlight was the Earth Station of Satellite Communications opened at Kumsan. See Table 2, Present Status of Telecommunication Facilities owned by MOC.

As shown in the following Table 3; Growth of Telecommunications in 1960-1970, Korean telecommunications have remarkably grown in the last decade of 1960's. During this period, telecommunication plant expanded to more than 5 times of the 1960 level whereas service volume increased to 10 times.

This was largely indebted to the intensive foreign loans inflowed in this period. Up to now, total amount of foreign loans reached approx. US\$60 million as shown in Table 4, Total Amount of Loans from various sources.

Nonetheless, data show that long line communications remain far from a satisfactory service in quality and quantity as well. There are still a great many bottlenecks or hot spots of long distance telephone service where the waiting time takes more than two hours.

The prime objectives of the 3rd 5-Year Plan in the field of Telecommunications has thus focused on the needs of developing the nation's rural economy.



Table 2

Present Status of Telecommunication Facilities  
owned by MOC up to end of 1971

<u>Item</u>	<u>Unit</u>	<u>Quantity</u>
1. <u>Local Telephone Exchange</u>	L/U	634,430
1) Automatic		464,500
2) Common Battery		47,400
3) Magnetic		122,530
2. <u>Long-lines</u>		
1) <u>Carrier Telephone System</u>	Ch	7,262
Coaxial Cable Carrier Sys.		1,080
Cable Carrier Sys.		1,068
Open Wire Carrier Sys.		1,999
Micro-wave Carrier Sys.		2,160
PCM Carrier Sys.		960
2) <u>T. G. Carrier System</u>	Ch	917
3) <u>Scatter System</u>	Ch	120
4) <u>Satellite Comm. System</u>	Ch	69
5) <u>Facsimile Equip't</u>	Ea	8
6) <u>Sound Telegraph Equip't</u>	Ea	416



Table 3Growth of Telecommunications Service

<u>Item</u>	<u>Unit</u>	<u>60</u>	<u>66</u>	<u>70</u>	<u>10 Yrs., Increase</u>	<u>% in- crease in '60 -'70</u>
1. Extension of Plant						
a. Local telephone	L/U	108,000	313,000	565,400	457,400	520
b. Subscriber	Man	86,600	277,700	492,300	406,300	570
c. Long line telephone	Ch	1,056	2,522	6,569	5,513	620
d. Telegraph	"	253	735	1,059	806	420
e. Overseas telegraph	"	8	14	34	26	430
f. Overseas telephone	"	10	18	82	72	820
g. T & T operating units	Ea	646	1,679	2,064	1,418	320
2. Traffic Volume (thousand)						
a. Local telephone	Call	216,000	854,000	2,175,000	1,959,000	1,010
b. Toll telephone	"	7,250	29,650	72,120	64,870	990
c. Telegraph	Ea	3,470	6,780	11,360	7,890	330
d. Overseas telephone	Call	60	100	660	600	1,100
3. Telephone subscriber per 100 population	L/U	0.43	1.17	2.2	1.77	51
4. Telecommunication Revenue	Mil. Won	1,451	11,364	28,465	28,014	1,9



Table 4

Total Amount of Loans from Various Sources Induced  
to Telecommunication Service

<u>Loan Sources</u>	<u>Amount</u> <u>(US\$ 1,000)</u>	<u>Item</u>
DLF - 32	3,500	Local tel. exchange equip't, Carrier
KFW AL - 66	9,414	Local tel. exchange, DDD, Telex exchange equip't
AID 489	7,800	M/W
KFW AL - 237	5,140	Local tel. exchange equip't
ECOP/PAC (K - 11)	1,000	Carrier, Teleprinter, Mobile VHF
KFW F - 72	4,814	Local tel. exchange equip't
EXIM, Philco-Ford	6,280	Satellite Earth Station
ECOP/PAC (K - 17)	1,800	Carrier, Teleprinter
EXIM	2,900	M/W
ECOP/PAC (K - 25)	1,436	Carrier
German Capital Aid	5,600	Local tel. exchange equip't
KFW	5,575	DDD, Telex exchange equip't
CANADA	5,400	M/W
Total	60,659	



## 2. Purpose of the Project

The loan project is an essential part of the aggregate framework of the 3rd 5-Year Plan for Telecommunication Development. See Table 5, 3rd 5-Year Plan for Telecommunications.

It is understood that the potentiality of steady economic development is eventually cast in the availability of infrastructure. The construction of a super-highway was inceptive of the future trend. The Central Government likewise recognizes that the adequate communication media plays an important interfacial role in securing the steady balanced economic growth throughout the nation.

This has been identified by the following table of distribution of social overhead capital investment projection whereby communication plant displays the largest percentage increase among them.

### Comparison of Social Overhead Capital Investment

	Unit: million won				
	72 - 76		67 - 71		% Increase
	Amount	Composition	Amount	Composition	
Total	565,272	43.6%	378,004	43.5%	149.5
Power, electric	23,128	1.8	30,478	3.5	75.9
Telecommunication	149,472	11.5	79,310	9.1	188.5
Transportation	344,646	26.6	235,231	27.1	146.5
Highway & Port Construction	48,026	3.7	32,986	3.8	145.6



Table 53rd 5-Year Plan for Telecommunication

Domestic: Million won  
Unit: Foreign : Thousand Dollar

<u>Field</u>	<u>Total Unit</u>	<u>Domestic Capital Required</u>	<u>Foreign Capital Required</u>	<u>Total (₩)</u>
1. Local Telephone Exchange	500,000 L/U	₩ 82,458	\$11,006 (₩4,127.3)	86,585.3
2. Longline Telephone Eq.	20,121 CH	₩ 30,092	\$24,368 (₩9,138)	39,230
3. Telegraph Facilities	6,540 CH	₩ 2,497	\$ 9,666 (₩3,624.8)	6,121.8
4. International T. T	262 CH	₩ 617	\$ 2,985 (₩1,119.4)	1,736.4
5. Facilities Replacement	--	₩ 1,141	\$ 536 (₩ 202)	1,343
<u>Total Telecom.</u>		<u>₩116,805</u>	<u>\$48,561 (₩18,211.5)</u>	<u>135,016.5</u>

## 3. Outline of the Individual Project Scheme

The loan project is to provide various carrier equipment for use of long line telephone circuit, PCM carrier equipment, TG carrier equipment, overseas communication equipment and Facsimile, the foreign cost portion of which is estimated approx. US\$20 million. The quantity of long lines is projected to meet about 60% of accumulative demand in 1976 based on the attached Table 6, Demand and Supply in 1972-1976.



Table 6Demand & Supply Plan in 1972 - 1976

Item	Unit	Projection					Total
		1972	1973	1974	1975	1976	
<u>Long lines (Telephone)</u>							
Marginal demand	ch	2,246	3,230	5,712	6,120	7,937	25,245
Marginal supply	ch	2,028	2,268	3,384	3,600	4,041	15,321
Coaxial Carrier		720	720	1,140	1,020	780	4,380
M/W (*)		528	636	840	1,056	1,320	4,380
Cable Carrier		480	528	888	984	1,224	4,104
Open Wire Carrier		300	384	516	540	717	2,457
<u>PCM (**)</u>							
Marginal supply	ch	720	960	1,200	696	840	4,416
<u>TG Carrier (***)</u>							
Marginal demand	ch	775	266	206	193	154	1,594
Marginal supply	ch	300	300	300	360	480	1,740
<u>Scatter System</u>							
Marginal demand	L/U	30	10	25	15	20	100
Marginal supply				60			60
<u>Satellite Comm.</u>							
Marginal demand	L/U	16	18	16	19	12	81
Marginal supply		0	72	0	0	0	72
<u>Facsimile (*****)</u>							
Marginal supply	Set	260	300	300	500	640	2,000



# Footnotes:

- \* Microwave is excluded from the project.
- \*\* The demand is not describable: It is new origin that PCM be devised for use of inter-office trunk lines.
- \*\*\* The projection includes EDPS requirements of the future.
- \*\*\*\* The demand is not describable: They will replace obsolete sound telegraph equipment (Morse type)

## 3.1 Coaxial Cable Carrier System

660 channels of this type are now in service and another 420 channels will be made available in 1971.

## Routing Plan

Unit: Channel

<u>Route</u>	<u>Project Year</u>					<u>Total</u>
	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	
Seoul - Taejeon	180	0	60	0	60	300
Seoul - Taegu	240	60	180	120	60	660
Seoul - Pusan	0	300	180	180	120	780
Seoul - Suwon	0	0	60	120	0	180
Seoul - Chonju	0	0	120	0	60	180
Seoul - Kwangju	0	0	120	0	60	180
Seoul - Euijongbo	0	0	0	120	0	120
Taegu - Taejeon	60	0	0	0	60	120
Taejeon - Keumsan	60	0	0	60	0	120
Taejeon - Kimchon	0	0	60	0	0	60
Pusan - Taegu	0	180	180	60	0	420
Pusan - Taejeon	0	0	0	60	60	120
Pusan - Masan	0	0	0	0	120	120
Seoul - Taejeon	VIDEO 1	0	0	0	0	VIDEO 1
- Keumsan						
Taejeon - Siheung	120	0	0	120	0	240
Taegu - Kyoungju	0	60	0	60	0	120
Taegu - Kimchon	0	120	0	0	0	120



Taegu - Youngchon	0	0	60	0	60	120
Pusan - Wolsan	0	0	120	0	0	120
Taejeon - Nonsan	60	0	0	60	0	120
Jeonju - Chongsaup	0	0	0	60	0	60
Seoul - Mokpo	0	0	0	0	60	60
Kwangju - Mokpo	0	0	0	0	60	60
<u>Total</u>	<u>720</u>	<u>720</u>	<u>1,140</u>	<u>1,020</u>	<u>780</u>	<u>4,380</u>
	VIDEO 1					VIDEO 1

### 3.2 Cable Carrier System

MOC is operating 444 channels of T-12A-Tr type and 432 channels of C-12 type, and another 192 channels will be put into service in 1971.

#### (a) Routing plan for 1972

<u>Priority</u>	<u>Route</u>	<u>Distance</u>	<u>CH</u>	<u>Type</u>
1	Chonju - Koonsan	56 Km	60	C-12T
2	Chonju - Xree	29	48	"
3	Chonju - Kimje	49	36	"
4	Chonan - Hongsung	60	96	"
5	Chonan - Yesan	40	24	"
6	Yesan - Hongsung	20.2	24	"
7	Seoul - Kwangju	24	36	PCM
8	Kangneung - Mookho	39	12	C-12



<u>Priority</u>	<u>Route</u>	<u>Distance</u>	<u>CH</u>	<u>Type</u>
9	Xangneung - Samcheuk	56 Km	60	C-12
10	Chongju - Chonshiwon	18	60	PCM
11	Pusan - Milyang	54	12	C-12
12	Taegu - Milyang	60	12	"
<u>Total</u>			<u>480</u>	

(b) Routing plan for 1973

<u>Priority</u>	<u>Route</u>	<u>Distance</u>	<u>CH</u>	<u>Type</u>
1	Seoul - Incheon	77 Km	36	C-12
2	Taegu - Pohang	114	120	"
3	Taegu - Andong	99	96	"
4	Taegu - Uiseung	92	24	"
5	Pohang - Kyoungju	34	36	"
6	Kwangju - Songjeung	13	168	PCM
7	Wonju - Hwaengseung	18	48	"
<u>Total</u>			<u>528</u>	

(c) Routing plan for 1974

<u>Priority</u>	<u>Route</u>	<u>Distance</u>	<u>CH</u>	<u>Type</u>
1	Seoul - Pochon	54.1 Km	48	C-12
2	Seoul - Cholwon	84.5	48	"
3	Seoul - Anyang	39.9	108	"
4	Chonju - Namwon	59.0	60	"
5	Suwon - Chonan	58.8	36	"
6	Koosnan - Iree	24.0	60	"
7	Kimje - Iree	30.0	36	"
8	Chongju - Kaesan	38.0	36	"
9	Taejeon - Youngdong	45.6	48	"



<u>Priority</u>	<u>Route</u>	<u>Distance</u>	<u>CH</u>	<u>Type</u>
10	Taejeon - Okchon	14.0 Km.	48	PCM
11	Seoul - Moonsan	43.7	60	C-12
12	Taejeon - Nonsan	42.5	60	"
13	Chonju - Jeungeup	45.0	60	"
14	Taegu - Waekwan	22.8	48	PCM
15	Kangneung - Mookho	38.1	60	C-12
16	Kangneung - Bookpyoung	84.0	36	"
17	Kangneung - Samchuck	56.0	36	"
<u>Total</u>			888	

(d) Routing plan for 1975

<u>Priority</u>	<u>Route</u>	<u>Distance</u>	<u>CH</u>	<u>Type</u>
1	Mokpo - Youngsanpo	53.0 Km	36	C-12
2	Chonju - Iree	28.0	120	PCM
3	Kwangju - Danyang	22.4	72	"
4	Hongseung - Yesan	20.5	72	"
5	Kyoungju - Youngchon	54.0	48	C-12
6	Kimchon - Youngdong	60.2	48	"
7	Kwangju - Youngsanpo	32.3	48	"
8	Chinju - Hadong	36.0	48	"
9	Ichon - Kwangju	26.0	48	PCM
10	Chonju - Kimje	49.1	60	C-12
11	Chonju - Namwon	58.4	60	"
12	Pusan - Milyang	54.0	60	"



<u>Priority</u>	<u>Route</u>	<u>Distance</u>	<u>CH</u>	<u>Type</u>
13	Taegu - Milyang	64.0 Km	48	"
14	Suwon - Anyang	17.4	48	PCM
15	Pusan - Kimhae	25.0	48	"
16	Chungju - Chongju	83.0	120	"
	<u>Total</u>		<u>984</u>	

(e) Routing plan for 1976

<u>Priority</u>	<u>Route</u>	<u>Distance</u>	<u>CH</u>	<u>Type</u>
1	Chunchon - Hungchon	36.9 Km	36	C-12
2	Masan - Chinhae	27.0	120	PCM
3	Keunsan - Iree	24.0	120	"
4	Kimje - Kunsan	46.0	48	C-12
5	Kangneung - Mookho	38.1	48	"
6	Seoul - Yeoju	74.0	36	"
7	Wonju - Kangneung	140.0	120	"
8	Inchon - Yeoju	17.0	48	PCM
9	Chongju - Jeungpyong	16.0	48	"
10	Chungju - Kaesan	15.0	48	"
11	Seoul - Chungju	120	120	C-12
12	Chungju - Andong	109	60	"
13	Taegu - Andong	99	48	"
14	Andong - Jomchon	46	36	"
15	Chungju - Moonkyong	39	36	"
16	Seoul - Wonju	125	120	"
17	Inchon - Suwon	54	120	"
18	Pusan - Yangsan	53	12	"
	<u>Total</u>		<u>1,224</u>	
	<u>Grand Total</u>		<u>4,104</u>	



### 3.3 Open Wire Carrier System

A total 1,656 channels are served in various smaller cities and additional 343 ch will be made available in 1971. Particular importance is given to this project: a total 2,457 channels of 12 channel system will be fed to smaller towns, farming and fishery areas covering 205 different routes during the planned period.

#### (a) Routing plan for 1972

<u>Priority</u>	<u>Route</u>	<u>CH</u>	<u>Priority</u>	<u>Route</u>	<u>CH</u>
1	Seoul - Incheon	12	15	Pusan-Kyoungju	12
2	Taejeon - Muju	12	16	Taegu-Changryong	12
3	Chonju - Cheungeup	12	17	Taegu-Hapchon	12
4	Chonju - Imsil	12	18	Taegu-Songju	12
5	Chonju - Jangsu	12	19	Taegu-Uiseung	12
6	Kwangju - Iree	12	20	Taegu-Koonwui	12
7	Kwangju - Hwasoon	12	21	Taegu-Goryong	12
8	Kwangju-Naju	12	22	Taegu-Heumchon	12
9	Kwangju-Danyang	12	23	Taegu-Chongdo	12
10	Kwangju-Hampyoung	12	24	Taegu-Sunsan	12
11	Kwangju-Youngam	12	25	Sokcho-Sulak	12
12	Kwangju-Gokseung	12			
13	Kwangju-Cheungeup	12			
14	Pusan - Kyoungju	12	<u>Total</u>	<u>25 Sections</u>	<u>300</u>



(b) Routing plan for 1973

<u>Priority</u>	<u>Route</u>	<u>CH</u>	<u>Priority</u>	<u>Route</u>	<u>CH</u>
1	Seoul-Yeoju	12	17	Nonsan-Iree	12
2	Seoul-Kongju	12	18	Jaechon-Pyoungchang	12
3	Chonju-Chinan	12	19	Kyoungju-Pohang	12
4	Kwangju-Koonsan	12	20	Jeumchon-Yechon	12
5	Kwangju-Changseung	12	21	Pohang-Wooljin	12
6	Kwangju-Boseung	12	22	Seoul-Janghowan	12
7	Kwangju-Soonchang	12	23	Seoul-Bupwonri	12
8	Kwangju-Changheung	12	24	Seoul-Joonae	12
9	Taegu-Keuchang	12	25	Seoul-Daukso	12
10	Taegu-Sangju	12	26	Seoul-Dongdoochon	12
11	Taegu-Seungju	12	27	Taejeon-Yeunmoodae	12
12	Ichon-Yeoju	12	28	Taejeon-Sintanjin	12
13	Ichon-Yangpyoung	12	29	Chonju-Ohseo	12
14	Koonsan-Chungeup	12	30	Kwangju-Youngsanpo	12
15	Cheungeup-Iree	12	31	Kwangju-Beulkyo	12
16	Namwon-Soonchang	12	32	Taegu-Hwawon	12
<u>Total</u>			<u>32 sections</u>		<u>384</u>



## (c) Routing plan for 1974

<u>Priority</u>	<u>Route</u>	<u>CH</u>	<u>Priority</u>	<u>Route</u>	<u>CH</u>
1	Kangneung-Cholam	12	23	Gohung-Narodo	12
2	Hongsoung-Gwangchon	12	24	Yongnam-Youngsanpo	12
3	Mokpo-Youngsanpo	12	25	Jangheung-Sinwol	12
4	Masan-Changwon	12	26	Haenam-Bookpyoung	12
5	Moonsan-Bupwonri	12	27	Seukwipo-Seungsanpo	12
6	Moonsan-Papyoung	12	28	Kyongju-Boolkuksa	12
7	Ichon-Janghowon	12	29	Kyongju-Insil	12
8	Pyongtaek-Paengsung	12	30	Youngduck-Hoopo	12
9	Samchun-Jangseung	12	31	Youngju-Choonyang	12
10	Inje-Wondong	12	32	Jeumchon-Hamchang	12
11	Boeun-Sokrisan	12	33	Pohang-Kimpo	12
12	Danyang-Maopo	12	34	Pohang-Ankang	12
13	Youngdong-Hwangkan	12	35	Pohang-Heunghae	12
14	Jechon-Maepo	12	36	Gohyoung-Jangsungpo	12
15	Nonsan-Kangkyoung	12	37	Wolsan-Jangsaengpo	12
16	Dangjin-Hapduck	12	38	Pusan-Bangeujin	12
17	Kimje-Mankyoung	12	39	Choongmoo-Jangsangpo	12
18	Iree-Kangkyoung	12	40	Choongmoo-Kenjae	12
19	Iree-Nangsan	12	41	Euryoung-Sinban	12
20	Jeonseup-Julpo	12	42	Sokcho-Kenjin	12
21	Jangseo-Janggea	12	43	Sokcho-Mookho	12
22	Kangjin-Seungchon	12	<u>Total</u>	<u>43 sections</u>	<u>516</u>



(d) Routing plan for 1975

<u>Priority</u>	<u>Route</u>	<u>CH</u>	<u>Priority</u>	<u>Route</u>	<u>CH</u>
1	Suwon-Yongin	12	24	Samchuk-Pohang	12
2	Suwon-Pyoungtaek	12	25	Jinan-Jangsoo	12
3	Suwon-Anseung	12	26	Namwon-Koorae	12
4	Kangneong-Chongseun	12	27	Namwon-Hamyang	12
5	Sooncheun-Koorae	12	28	Haenam-Kangjin	12
6	Mokpo-Youngam	12	29	Nonsan-Koonsan	12
7	Mokpo-Jindo	12	30	Nonsan-Pooyo	12
8	Hongseung-Tangjin	12	31	Kongju-Chongyang	12
9	Chongju-Chochiwon	12	32	Waekwan-Seungju	12
10	Chongju-Jincheun	12	33	Chungmoo-Kohyon	12
11	Chongju-Eumseung	12	34	Kyoungju-Pohang	12
12	Chongju-Boeun	12	35	Kimchon-Waekwan	12
13	Chongju-Kaesan	12	36	Youngju-Yechon	12
14	Chungju-Damyang	12	37	Jeumchon-Yechon	12
15	Chonju-Hadong	12	38	Pohang-Samchuk	12
16	Chonju-Keuchang	12	39	Pohang-Wooljin	12
17	Jinju-Hamyang	12	40	Seoul-Dongdoochon	12
18	Andong-Eusung	12	41	Taejeon-Sintanjin	12
19	Andong-Chongsong	12	42	Chonju-Wonju	12
20	Andong-Youngyang	12	43	Chonju-Kohsan	12
21	Andong-Youngduck	12	44	Kwangju-Nampyoung	12
22	Ichon-Kwangju	12	45	Taegu-Ansim	12
23	Youngwol-Pyoungchang	12	<u>Total</u>	<u>45 sections</u>	<u>540</u>



(e) Routing plan for 1976

<u>Priority</u>	<u>Route</u>	<u>CH</u>	<u>Priority</u>	<u>Route</u>	<u>CH</u>
1	Kwangju-Naksaeng	12	22	Kimje-Wonpyoung	12
2	Anseung-Iljuk	12	23	Namwon-Daegang	12
3	Pyoungtaek-Anjung	12	24	Namwon-Ohsoo	12
4	Pochon-Jangam	12	25	Mooju-Seulchon	12
5	Samchuk-Keunduck	12	26	Pooan-Gomso	12
6	Youngwol-Macha	12	27	Pooan-Gulpo	12
7	Youngwol-Hambaek	12	28	Iree-Hamyoul	12
8	Hoesong-Daohwa	12	29	Jeungeup-Sintaein	12
9	Goesan-Jeongpyoung	12	30	Iree-Yongan	12
10	Boeun-Macha	12	31	Jeungeup-Naejang	12
11	Jinchon-Ducksan	12	32	Jeungeup-Youngwol	12
12	Jaechon-Naepo	12	33	Jeungeup-Hongduck	12
13	Dangjin-Gijisi	12	34	Kangjin-Maryang	12
14	Daecheon-Kwangchon	12	35	Bosung-Beulkyo	12
15	Pooyo-Hongsoung	12	36	Youngam-Seuho	12
16	Seuchon-Janghang	12	37	Wando-Goonwae	12
17	Seuchon-Hansan	12	38	Hawnam-Wusooyoung	12
18	Gochang-Mooan	12	39	Haesoon-Neungju	12
19	Gochang -Heungduck	12	40	Kwangyang-Seumkeu	12
20	Koonsan-Impee	12	41	Kyoungju-Chunchon	12
21	Kimje-Sintaein	12	42	Kyoungju-Gampo	12



<u>Priority</u>	<u>Route</u>	<u>CH</u>	<u>Priority</u>	<u>Route</u>	<u>CH</u>
43	Kyoungju-Anhwa	12	53	Pohang-Ankang	12
44	Kimchon-Choopung-ryoung	12	54	Keuchang-Gajo	12
45	Kimchon-Jirae	12	55	Gayang-Koorae	12
46	Youngchon-Hayang	12	56	Gosung-Dangdong	12
47	Wooljin-Hoopo	12	57	Kimhae-Jinyoung	12
48	Waekwan-Yakmock	12	58	Kimhae-Jukrim	12
49	Jeumchon-Gaeyun	12	59	Pusan-Eunyang	12
50	Chongsong-Boonam	12	60	Choongmoo-Jangseungpo	12
51	Pohang-Kuryongpo	12	<u>Total</u>	<u>60 sections</u>	<u>717</u>
52	Pohang-Hupo	12	<u>Grand Total</u>		<u>2,457</u>



### 3.4 Carrier Telegraph System

This type of system is applied to use for multiplication of trunk lines linked between telex exchange terminals and toll telephone terminals.

#### Routing Plan

(Unit: Channel)

<u>Route</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>Total</u>
Taejeon - Seoul	120	96	96	160	124	596
Taejeon - Pusan	48	48	48	48	72	264
Taejeon - Taegu	48	48	48	48	72	264
Taejeon - Kwangju	48	48	48	48	72	264
Taejeon - Chonju	36	24	24	24	60	168
Other inter-sections		36	36	32	80	184
<u>Total</u>	<u>300</u>	<u>300</u>	<u>300</u>	<u>360</u>	<u>480</u>	<u>1,740</u>

### 3.5 Facsimile Equipment

The project is dedicated to a modernization plan of telegraph service. A total of 2,000 complete sets will be supplied to smaller post offices of remote areas to replace Morse type.

### 3.6 Scatter System between Korea and Japan

A capacity of 120 channels are now been operating. The plan is to put 60 channels add-on in 1975.



### 3.7 Satellite Communication System

When 30 channels add-on be completed in 1971, a total capacity of 69 channels will be in service. The plan is to provide 20 channels add-on in 1974 and 52 channels in 1976, respectively, to cope with growing overseas communications.

<u>Routing Plan</u> <u>(International)</u>	<u>Channel</u>
Seoul - U. S. A.	32
Seoul - Hong Kong	12
Seoul - Philippines	1
Seoul - Thailand	1
Seoul - Taiwan	2
Seoul - India	1
Reserve Channel	23
<u>Total</u>	<u>72</u>

### 3.8 PCM Carrier System

384 channels are now in service and additional 576 channels will be put into service in 1971.

Based on technical advantages and economic reason, PCM will be used for multiplexing inter-office trunk lines in larger cities where cable construction is costly and complicate.



(a) Routing plan for 1972

(1) Seung Buk Bureau	240 CH
- No Ryang Jin	
(2) Kwang Ju	240 CH
- Song Jeung	
(3) No Ryang Jin	120 CH
- Toll Exchange Bureau	
(4) Toll Exchange Bureau	120 CH
- Young Deungpo	
Total	720 CH

(b) Routing plan for 1973

(1) Seung Buk Bureau	240 CH
- Young Deungpo	
(2) Dongdae Mun	240 CH
- Sin Chon	
(3) Pusan Bureau	240 CH
- Tong Nae	
(4) Pusan Bureau	240 CH
- Haeun Dae	
Total	960 CH



(c) Routing plan for 1974

(1) Dongdae Mun - Chong Ryangree	240 CH.
(2) Dongdae Mun - Young Deungpo	240 CH.
(3) Toll Exchange Bureau - No Ryangjin	240 CH.
(4) Cho Ryang Bureau - Haeun Dae	240 CH.
(5) Tae Jeon Bureau - Eu Seung	240 CH.
Total	1,200 CH

(d) Routing Plan for 1975

(1) Mok Po - Ilno	96 CH.
(2) Kwang Ju - Song Jeong	240 CH.
(3) Tae Ku - Dong Tae Ku	120 CH.
(4) Toll Exchange Bureau - Sin Chon	120 CH.
(5) Toll Exchange Bureau - Chong Ryangri	120 CH.
Total	696 CH.



(e) Routing plan for 1976

(1) Kwanghwa Mun - Kwang Jang	120 CH.
(2) Kwanghwa Mun - Chong Ryangri	120 CH.
(3) Mi Ari - No Ryangjin	240 CH.
(4) Mi Ari - Kwang Jang	120 CH.
(5) Dong dae Mun - No Ryang Jin	240 CH.
Total	840 CH.
Grand Total	4,416 CH.



#### 4. Estimated Funds of the Loan Project

Foreign cost of the project is estimated based on the previous quotations of ECOP project. Local cost, which totaled ₦ 9,593 million is estimated in accordance with the Domestic Production Plan projected as is indicated in below:

<u>Item</u>	<u>Domestic Production Plan</u>				
	<u>Domestic Production Ratio (%)</u>				
	<u>72</u>	<u>73</u>	<u>74</u>	<u>75</u>	<u>76</u>
Coaxial Cable Carrier Equip.	30	35	40	50	60
Cable Carrier Equip.	35	40	50	60	65
Open Wire Carrier Equip.	55	60	65	70	75
PCM	10	15	20	25	30

The details of fund requirement of the project are shown in Table 7, Estimated Funds of the project, Foreign Cost and Local Cost.



Table 7

Estimated Funds of the Project, Foreign Cost and  
Local Cost

Exchange rate: One US\$ =  
375 Won

Unit: Thousand Dollar  
Million Won

Project		72	73	74	75	76	Total
Coaxial Cable Carrier Sys.	Quantity (ch)	720	720	1,140	1,020	780	4,380
	Dollar	937	893	1,020	815	560	4,225
	Won	(351.4) 382.4	(334.9) 386.8	(382.5) 550.4	(305.6) 633.3	(210 ) 618.7	(1,584.4) 2,571.6
	Sub-total (₩)	733.8	721.7	932.9	938.9	828.7	4,156
Cable Carrier Sys.	Quantity (ch)	480	528	838	984	1,224	4,104
	Dollar	497	437	785	727.5	982.5	3,429
	Won	(186.4) 174.6	(163.9) 310.3	(294.4) 521.9	(272.8) 520.9	(368.4) 1,117.2	(1,285.9) 2,644.9
	Sub-total (₩)	361	474.2	816.3	793.7	1,485.6	3,930.8
Open-wire Carrier Sys.	Quantity (ch)	300	384	516	540	717	2,457
	Dollar	319.8	380	476	454	528	2,157.8
	Won	(120 ) 241.9	(142.5) 312.6	(178.5) 445.4	(170.2) 503.7	(198 ) 717.4	(809.2) 2,221
	Sub-total (₩)	361.9	455.1	623.9	673.9	915.4	3,030.2
PCM Carrier Sys.	Quantity (ch)	720	960	1,200	696	840	4,416
	Dollar	540	680	960	525	581	3,286
	Won	(202.5) 132.7	(255 ) 198.9	(360 ) 308.2	(196.8) 205.7	(217.9) 275.2	1,232.2 1,120.7
	Sub-total (₩)	335.2	453.9	668.2	402.5	493.1	2,352.9
TG Carrier Sys.	Quantity (ch)	300	300	300	360	480	1,740
	Dollar	330	330	340	380	525	1,905
	Won	(123.8) 89	(123.8) 89	(127.5) 97.8	(142.5) 105.6	(196.8) 127.8	(714.4) 509.2
	Sub-total (₩)	212.8	212.8	225.3	248.1	324.6	1,223.6



Project	72	73	74	75	76	Total	
Scatter Sys.	Quantity (ch)			60		60	
	Dollar			1,000		1,000	
				( 375)		( 375)	
	Won			137		137	
	Sub-total (₩)			512		512	
Satellite Comm. Sys.	Quantity (ch)		72			72	
	Dollar		1,200			1,200	
			( 450)			( 450)	
	Won		116			116	
	Sub-total (₩)		566			566	
Facsimile	Quantity	260	300	300	500	640	2,000
	Dollar	338	390	390	650	832	2,600
		(126.8)	(146.2)	(146.2)	(243.8)	(312)	( 975)
	Won	35	42	41	68	87	273
	Sub-total (₩)	161.8	188.2	187.2	311.8	399	1,248
Contingency						\$ 197.2 ( 73.9)	
Total	Foreign cost	2,961.8	4,310	4,971	3,551.5	4,000	\$20,000
	Local cost	1,055.6	1,455.6	2,101.7	2,037.2	2,943.3	9,593.4



## 5. Construction Schedule

Under consideration of the contracting procedures, shipping and installation work, the following construction schedules are prepared for the completion of project in the scheduled year.

### Construction Schedule

<u>Project</u>	<u>Contract</u>	<u>Manufactur- ing</u>	<u>Shipping</u>	<u>Install- ation</u>	<u>Cut- over</u>
Carrier telephone sys. (FY 72)	72. 2	72.5	73.3	73.4	73.6
Carrier telegraph sys. (FY 72)	72.2	72.5	73.1	73.2	73.4
Scatter sys.	74.4	75.2	75.3	75.6	75.7
Satellite Communication sys.	73.4	74.2	74.3	74.4	74.7
Facsimile equipment (FY 72)	72.2	72.3	73.1	73.2	73.4



6. Administrative arrangement and Procurement procedures

When the financial sources of foreign capital is made available, NOC will take an immediate action required to effectuate a loan agreement pursuant to the domestic laws. The office of supply will proceed the necessary procurement procedures of the loan project in accordance with the pertinent regulations. The procurement contract shall be a triple parties contract between OSROK, foreign manufacturer and domestic manufacturer.

Foreign manufacturer shall supply raw material, parts and components which can not be produced in domestic market whereas domestic manufacturer shall manufacture a list of product items locally available and supply the complete assembly of the project items.



## 7. Benefits of the Project

- 1) It is expected that the increased capacity derived from the project satisfies inter-city communication traffic considerably which otherwise would have gotten worse, and results in an improved transmission quality and service efficiency. The improved service efficiency in turn has a positive effect on revenue.
- 2) It helps modernize rural communication Media - from Morse to Facsimile.
- 3) It is expected to serve for integration of long line circuits.
- 4) Multiplexed inter-office trunk lines by PCM carrier system save the transmission loss and increase trunk line capacity with less cost.
- 5) It provides enough quantity of long line circuits, which permits toll dialing system (DDD) practicable.
- 6) Increased capacity of overseas communications may effect a stimulus on international trade promotion.
- 7) The project is characterized by the intent of promoting domestic manufacturing capabilities of the project items.



### III. Technical Feasibility

#### 1. Local manufacturing techniques

Local manufacturing of the project equipment as indicated in the attached domestic manufacturing schedule will be undertaken by a qualified industry which has become experienced over the past few years in supplying MOC assembled products of the major project items. The project is characteristically designed for a radical increase and improvement of domestic manufacturing capabilities of the project items under technical cooperation arrangement.

#### 2. Installation techniques

MOC has 7,525 employees of technical manpower in telecommunication field including 814 carrier technicians. Carrier equipment has been installed and operated since 1960, and MOC's construction teams have become experienced in installation techniques. New techniques which the project may require are expected to be solved by technical assistance.

#### 3. Maintenance and Operation

Carrier terminals have been maintained and operated by 12 construction offices for the past 10 years. Technicians are trained by MOC's training institute. As plant size increased rapidly in the recent years, particular importance was laid on the effective training of technical forces for both maintenance and installation. On coping with the problem, the Training Institute began to reform its organiza-



tion - a number of local training institutes were newly opened and started functioning.

Its functions were called upon diversification. As a result, Central Training Institute is primarily assigned to undertake training professional engineers and instructors as well whereas local training institutes are expected to train technicians, operators and other technical manpower.

This program is however constrained to an inactivity because of the limited budget and training equipment and the lack of enough instructors. It is therefore expected to provide a sufficient number of fellowship to MOC personnel and invite foreign experts to train them through a technical assistance arrangement. It is particularly emphasized in so far as new type of equipment is concerned. In regard to spare parts, which may be required for maintenance, these will be secured by MOC's fiscal budget.



#### IV. Economic Feasibility

##### 1. Economic aspect

As shown in Table 8, Cash Flow Plan, annual investment funds for fixed assets are projected to be generated from the self-gained reserves, i.e. net income, depreciation and capital surplus. Weight of long-term liabilities over total investment size remains slightly over 10%. As such being the financial structure, the local funds required for the project are expected to be raised smoothly.

##### 2. Ability of repayment

As shown in Table 9, Analysis of Financial Statements, Table 10, Comparative P/L Statement and Table 11, Comparative Balance Sheet, current ratio in the last four years was 153% at lowest : it is projected to increase up to more than 200% in the coming four years. Solvency of short-term debt is, therefore, plainly sufficient.

Solvency of long-term debt is also evidently sufficient on account of debt ratio. Profitability in terms of net income to revenue on overall communication service including postal service gained 27% - 45% in 1966 - 1970 : it is projected to gain 28% - 33% in 1971 - 1976. This represents the best business return among public utility enterprises.



Table 8

Cash Flow Plan

Unit: one million

Special account of communication services

Item	Year	Analysis on the Past records				Future Projections					
		1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Cash inflows											
1. Net income		6,230	8 0	6,795	9,080	14,198	14,824	17,348	23,398	28,278	32,585
2. Non-cash expenditures		845	1,139	4,827	4,423	3,923	4,232	4,461	5,794	6,738	9,801
a) Depreciation		797	997	4,827	4,423	3,646	4,232	4,461	5,794	6,738	9,801
b) Loan valuation		48	142	0	0	277	0	0	0	0	0
3. Capital revenue		4,509	14,371	12,485	13,745	5,330	11,612	15,377	16,940	15,616	10,558
a) Long-term loans		1,386	1,602	2,134	201	695	2,393	1,456	2,349	1,230	1,994
b) Capital surplus		3,123	12,769	10,351	13,544	4,635	9,221	13,921	14,591	14,386	8,564
Assets revaluation		0	9,768	6,513	10,448	0	4,927	6,832	10,751	8,689	2,230
Donation		37	178	86	55	0	119	70	140	160	140
Subscriber charges		3,083	2,806	3,709	2,961	4,573	4,081	4,890	3,605	5,337	5,990
Others		3	17	43	80	62	94	129	95	200	204
Total cash inflows		11,564	23,670	24,107	27,248	23,451	30,670	37,186	46,132	50,632	52,944
Cash outflows											
1. Capital expenditures		11,810	22,499	19,429	28,037	23,451	24,520	28,720	32,942	36,505	41,104
a) Additions to fixed assets		9,855	20,999	18,953	27,668	23,451	24,520	28,720	32,942	36,505	41,104
b) Deposits on treasury		1,700	1,500	0	0	0	0	0	0	0	0
c) Deferred assets		0	0	476	369	0	0	0	0	0	0
2. Payment on long-term debt		85	88	77	51	695	1,148	1,365	1,379	1,757	1,709
3. Capital surplus		169	0	0	0	0	0	0	0	0	0
4. Net increase to working capital		500	1,083	4,601	840	695	5,002	7,101	11,811	12,370	10,131
Total cash outflows		11,564	23,670	24,107	27,248	23,451	30,670	37,186	46,132	50,632	52,944



Table 9

Analysis of Financial Statements

Year		1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Item												
Current ratio	<u>Current assets</u> Current liabilities	241 %	184 %	153 %	176.5 %	153.8 %	153 %	184 %	205 %	221 %	223 %	201 %
Debt ratio	<u>Liabilities</u> Total capital	48.6 %	47.5 %	49.6 %	38.7 %	34.5 %	29 %	26 %	25 %	24 %	24 %	29 %
Long-term adjustable ratio	<u>Fixed assets</u> Ownership + fixed liabilities	67 %	72 %	78 %	77 %	83 %	85 %	83 %	82 %	79 %	77 %	76 %
Net income to Revenue ratio	<u>Net income</u> Revenue	44.7 %	40.3 %	36.1 %	24.8 %	27.0 %	32 %	28 %	29 %	32 %	33 %	33 %
Telecomm. net income ratio	<u>Telecomm. net income</u> Telecomm. revenue	53 %	48 %	48 %	44 %	42 %						



Table 10

## Comparative Profit &amp; Loss Statement

Unit: one million won

Item	Year	Analysis on the past records					Future projections					
		66	67	68	69	70	71	72	73	74	75	76
1. Operating revenue		12,392	15,445	21,584	27,359	33,524	43,544	51,601	59,026	71,436	83,899	97,468
a) Postal service		5,353	4,397	5,863	7,076	8,846	10,897	13,419	14,811	16,237	17,704	19,220
b) Telecomm.		9,042	11,048	15,821	20,283	24,678	32,647	38,182	44,215	55,199	66,195	78,248
2. Operating expenses		6,594	8,934	12,811	19,451	23,015	25,801	32,801	37,133	43,244	50,555	59,338
a) Postal service		2,562	3,411	5,113	8,776	9,535	8,727	13,414	14,941	16,651	18,570	20,723
b) Telecomm.		3,942	5,523	7,698	10,675	13,480	17,074	19,387	22,192	26,593	31,985	38,615
3. Operating income, gross		5,888	6,511	8,873	7,908	10,509	17,743	18,800	21,893	28,192	33,344	38,130
4. General administrative expense		337	516	694	1,051	1,181	1,541	1,546	1,756	1,999	2,276	2,592
5. Operating income		5,551	5,995	8,179	6,857	9,328	16,202	17,254	20,137	26,193	31,068	35,538
6. Non-operating income		600	858	895	931	1,371	340	429	467	505	542	580
7. Current gross income		6,151	6,853	9,074	7,788	10,699	16,542	17,683	20,604	26,698	31,610	36,118
8. Non-operating expense		606	623	914	993	1,619	2,344	2,859	3,256	3,300	3,332	3,533
9. Current net income		5,545	6,230	8,160	6,795	9,080	14,198	14,824	17,348	23,398	28,278	32,585



Table 11

## Comparative Balance Sheet

Unit: one million won

Item	Year	Analysis on the past records					Future Projections					
		66	67	68	69	70	71	72	73	74	75	76
Assets:												
1) Fixed Assets		21,992	31,848	52,847	71,801	99,470	122,922	147,442	176,162	209,104	245,609	286,713
Depreciation reserve		1,517	2,315	3,312	8,139	12,563	16,209	20,441	24,902	30,696	37,434	47,235
2) Current assets		7,459	7,901	13,399	16,118	17,131	17,131	21,349	30,123	40,525	60,275	83,110
3) Investment		3,283	5,399	7,253	11,240	14,065	14,065	16,254	21,166	28,999	34,478	45,089
4) Deposit on treasury account		2,200	3,900	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400
5) Deferred assets		1,436	1,389	1,247	1,724	2,093	1,816	1,816	1,816	1,816	1,816	1,816
Total assets		34,853	48,122	76,834	98,144	125,596	145,125	171,820	209,765	255,148	310,144	374,893
Liabilities:												
1) Long-term debt		6,974	8,275	9,788	11,845	11,995	12,690	15,083	16,539	18,888	20,118	22,112
2) Short-term debt		346	885	3,081	1,254	1,766	1,766	2,445	2,717	4,099	6,544	9,812
3) Postal savings and money order		4,097	6,342	10,414	14,347	18,510	18,510	18,088	23,036	26,699	35,355	53,694
Total liabilities		11,417	15,502	23,283	27,446	32,271	32,966	35,616	42,292	49,686	62,018	85,618
Ownership:												
1) Capital		6,427	6,424	6,424	6,424	6,424	6,424	6,424	6,424	6,424	6,424	6,424
2) Capital surplus		7,017	9,974	22,744	33,096	46,643	51,278	60,499	74,420	89,011	103,397	111,961
a) Revaluation reserve		3,219	3,053	12,821	19,335	29,784	29,784	34,711	43,543	54,294	62,983	65,213
b) Donation		204	241	420	506	561	561	680	750	890	1,050	1,190
c) Subscriber charges		3,537	6,620	9,426	13,135	16,097	20,670	24,751	29,641	33,246	38,583	44,573
d) Others		57	60	77	120	201	263	357	486	581	781	985
3) Earned surplus		9,992	16,222	24,383	31,178	40,258	54,457	69,281	86,629	110,027	138,305	170,890
a) Current net income		5,545	6,230	8,160	6,795	9,080	14,198	14,824	17,348	23,398	28,278	32,585
b) Others		4,447	9,992	16,223	24,383	31,178	40,259	54,457	60,281	86,629	110,027	138,305
Total ownership		23,436	32,620	53,551	70,698	93,325	112,159	136,204	167,473	205,462	248,126	289,275
Total liabilities and Ownership		34,853	48,122	76,834	98,144	125,596	145,125	171,820	209,765	255,148	310,144	374,893



## V. Proposed Loan

1. It is proposed that a loan fund of US\$20,000,000 be made to carry out the Project in conjunction with local financial resources.

2. The loan currency shall be used to import the parts and components which are not available in domestic market.

### 3. Proposed loan condition:

- |                 |   |  |
|-----------------|---|--|
| 1) Amount       | : | US\$20,000,000.-   |
| 2) Purpose      | : | To finance the necessary fund to expand long-line telephone facilities including Scatter system, Satellite communication equipment; PCM Carrier equipment and Facsimile. |
| 3) Interest     | : | 3% per annum including grace period.   |
| 4) Grace Period | : | 10 years.  |
| 5) Repayment    | : | 20 years (semi-annual repayment)   |



# The Expansion Layout of Coaxial Cable Carrier Equipment in 3rd 5year Plan(1972-1976)

## 1. Coaxial carrier facilities in hand.

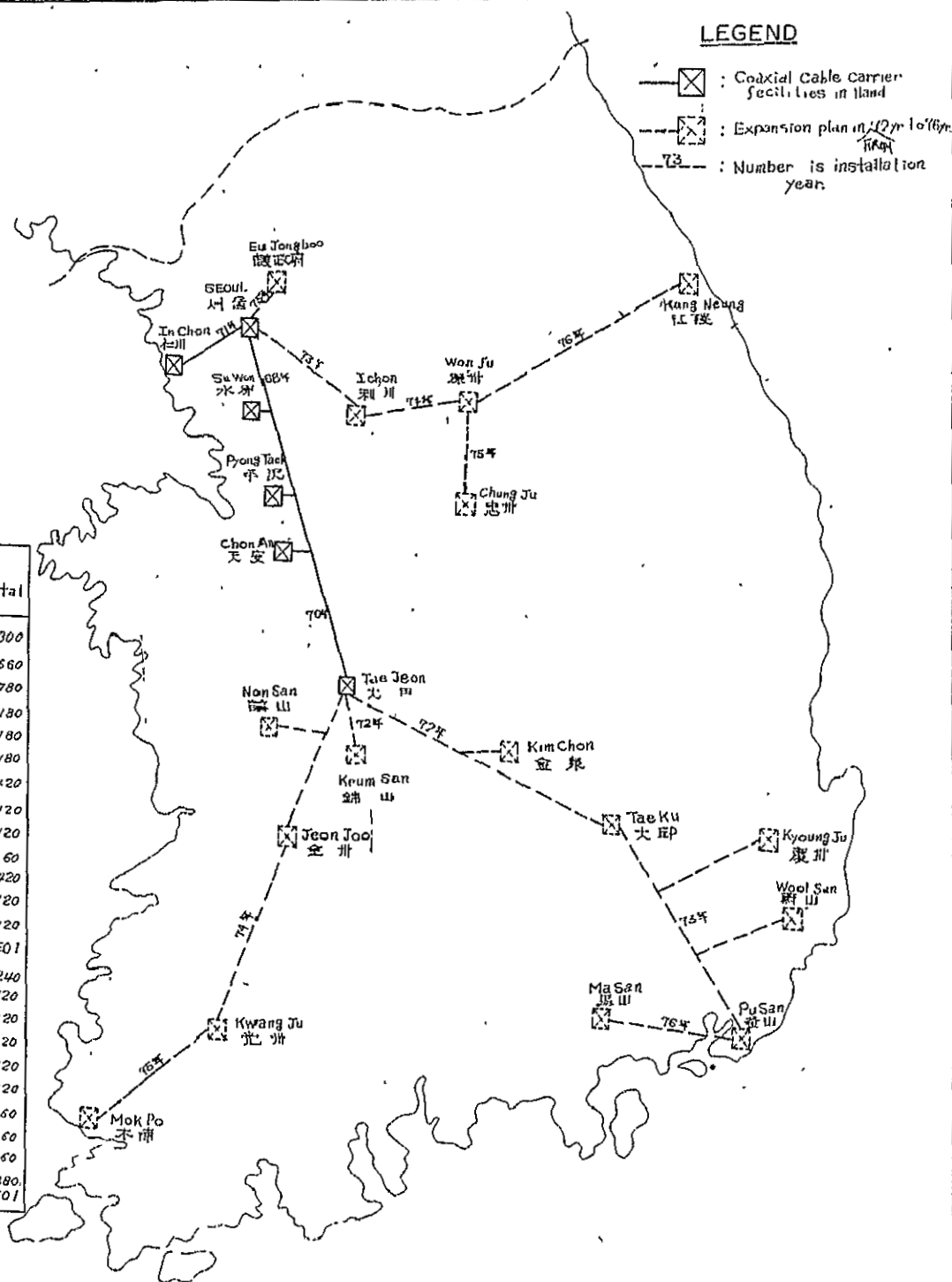
Inter section	Cannels	Remarks
Seoul - Suwon	180	1968 年度
" - Taejeon	240	1970 .
" - Chon An	120	"
" - Pyong Taek	60	"
Taejeon - Chon An	60	"
Seoul - In Chon	420	1971 年度
Total	1,080	

## 2. Expansion of the facilities.

Inter-section	Planning per year	1972	1973	1974	1975	1976	Total
Seoul - Taejeon		180	0	60	0	60	300
" - Tae Ku		240	60	180	120	60	660
" - Pusan		0	300	180	180	120	780
" - Suwon		0	0	60	120	0	180
" - Chon Ju		0	0	120	0	60	180
" Kwang Ju		0	0	120	0	60	180
" Eu Jongbo		0	0	0	120	0	120
Tae Ku - Tae Jeon		60	0	0	0	60	120
Tae Jeon - Keum San		60	0	0	60	0	120
" - Kim Chon		0	0	60	0	0	60
Pusan - Tae Ku		0	180	180	60	0	420
" - Tae Jeon		0	0	0	60	60	120
" Ma San		0	0	0	0	120	120
Seoul - Tae Jeon	VIDEO 1	0	0	0	0	0	VIDEO 1
Tae Jeon - Si Hwang		120	0	0	120	0	240
Tae Ku - Kyoung Ju		0	60	0	60	0	120
" - Kim Chon		0	120	0	0	0	120
" Young Chon		0	0	60	0	60	120
Pusan - Wool San		0	0	120	0	0	120
Tae Jeon - Non San		60	0	0	60	0	120
Tae Jeon - Chong Eup		0	0	0	60	0	60
Seoul - Mok Po		0	0	0	0	60	60
Kwang Ju - Mok Po		0	0	0	0	60	60
Total	720 VIDEO 1	720	1,140	1,020	780	780	4,380 VIDEO 1

## LEGEND

- ☒ : Coaxial Cable carrier facilities in hand
- ☒--- : Expansion plan in 12yr to 1976
- 73 : Number is installation year.





The Expansion Layout of Toll Cable Carrier Equipment in 3rd 5year Plan (1972-1976)

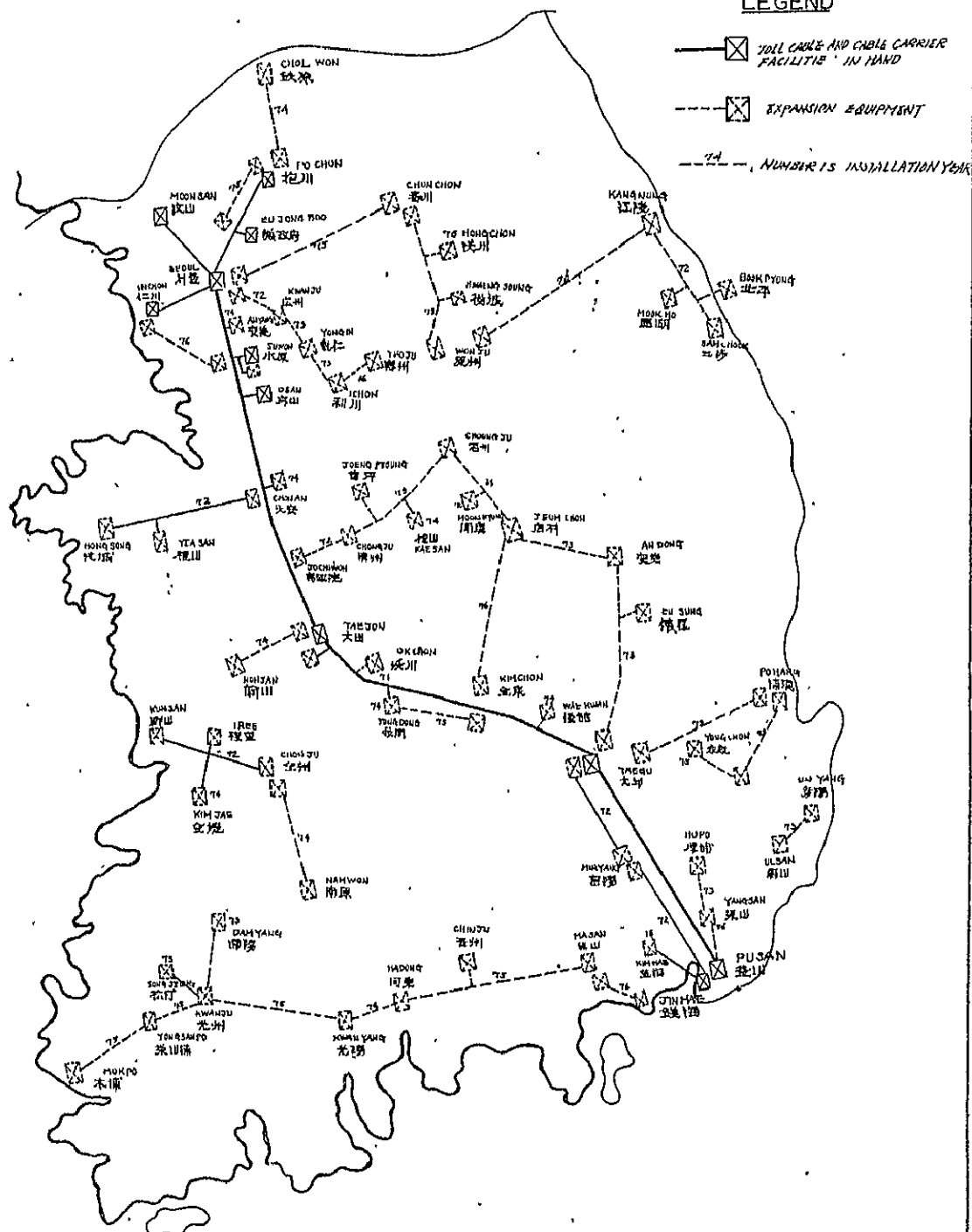
# 1 12CH CABLE CARRIER SYSTEMS IN HAND

INTER SECTION	CHANNEL 1	INTER SECTION	CHANNEL 2
STATION - PUSAN	84	ENDONG - PUSAN	24
" - TAEJU	24	JOHAN - JIANGJIAN	12
" - JIANGJIAN	24	BEIJIN - TAEJU	24
" - BEIJING	10	" - PUSAN	12
" - PEKIN	12	TAEJU - PUSAN	36
" - HANGSAN	24	PUSAN - HANGSAN	24
" - HANGHAN	432	TOTAL	792

## 2 1972-1976 Y'S INSTALLATION SECTIONS

175-177 TO 179 AND RELATION 000175 TO			175-177 TO 179 AND RELATION 000175 TO		
YEAR	INTER SECTION	CHANNEL	YEAR	INTER SECTION	CHANNEL
1974/5	CHON JU ~		HOON JU ~		
	ROAN SAN	60	YUNGSANG	36	
	CHON JU ~		CHONJU ~	120	
	-- IRRE	40	-- IRRE		
	CHON JU ~		HAANGJU ~	72	
	KIM JAE	36	HAANG JAE ~		
	CHON AN		YAE SAN	72	
	SENG JANG	36	KYANGJU ~		
	CHON JU ~		YANG CHUN	48	
	YAE SAN	24	KIMCHUN ~		
	HAANG JANG	24	YONG DANG	48	
	JONGJU ~		YONGJU ~	48	
	KWANGJU ~	36	YONGSANG	48	
	KANG NONG ~				
	HOON HO	12	1975/5	YONGJU ~	48
HOON JANG ~		HA DANG	48		
SANGCHUN	60				
CHONJU ~		KWANGJU	48		
CHONGWU	60	CHONJU ~			
POUSU ~		KIM JAE	60		
CHONGWU	12	CHONJU ~			
HAANG		HAANGJU	60		
CHONGWU	12	PUSAN ~			
		MYEYANG	60		
SUB TOTAL	480		TAEQU ~		
SEOUL ~			CHONGWU	48	
ICHON	36		SUNWU ~		
TAHOU ~			AN YANG	48	
POUSU	120		PUSAN ~		
TAEQU ~			KIM JAE	48	
AN DONG	96		CHONGJU ~	120	
TAEQU ~			CHONGJU		
YU SUNG	24		SUB TOTAL	960	
POUSU ~			CHONGWU ~		
KYANGJU	36		HAANGCHUN	36	
HAANGJU ~			CHANG ~	120	
SENG JANG	120		CHANGWU		
YONGJU ~			KUNSAU ~	120	
HAANGJANG	48		IRRE		
SUB TOTAL	624		KIM JAE ~		
SEOUL ~			KUNSAN	48	
POUSU	48		KANGWU ~		
SEOUL ~			HOON HO	48	
CHONGWU	48		SENG		
SEOUL ~			YONGJU	36	
AN YANG	108		HOANG		
CHONJU ~			KANGWU	120	
HAANGWU	60		ICHON		
SONG ~			YONGJU	48	
CHON AN	36		CHONGJU ~		
AMISAN			SENG JANG	48	
IRRE	60		CHONGJU ~		
KIM JAE	36		CHONGJU ~	60	
CHONGJU ~			TAEQU ~		
YAE SAN	36		AN DONG	48	
YANG JANG	48		YU CHUN	36	
TAEQU ~			CHONGJU	36	
OK CHUN	48		HOANGWU		
SENG			SEOUL ~	120	
HAANGJU	60		HOON		
HAANGJU	60		SUNWU	120	
CHONGWU	60		PUSAN ~		
YAE SAN	48		YANG SAN	12	
YONG JANG	60				
YONG JANG	36				
YANG JANG	36				
SUB TOTAL	888		SUB TOTAL	1,424	

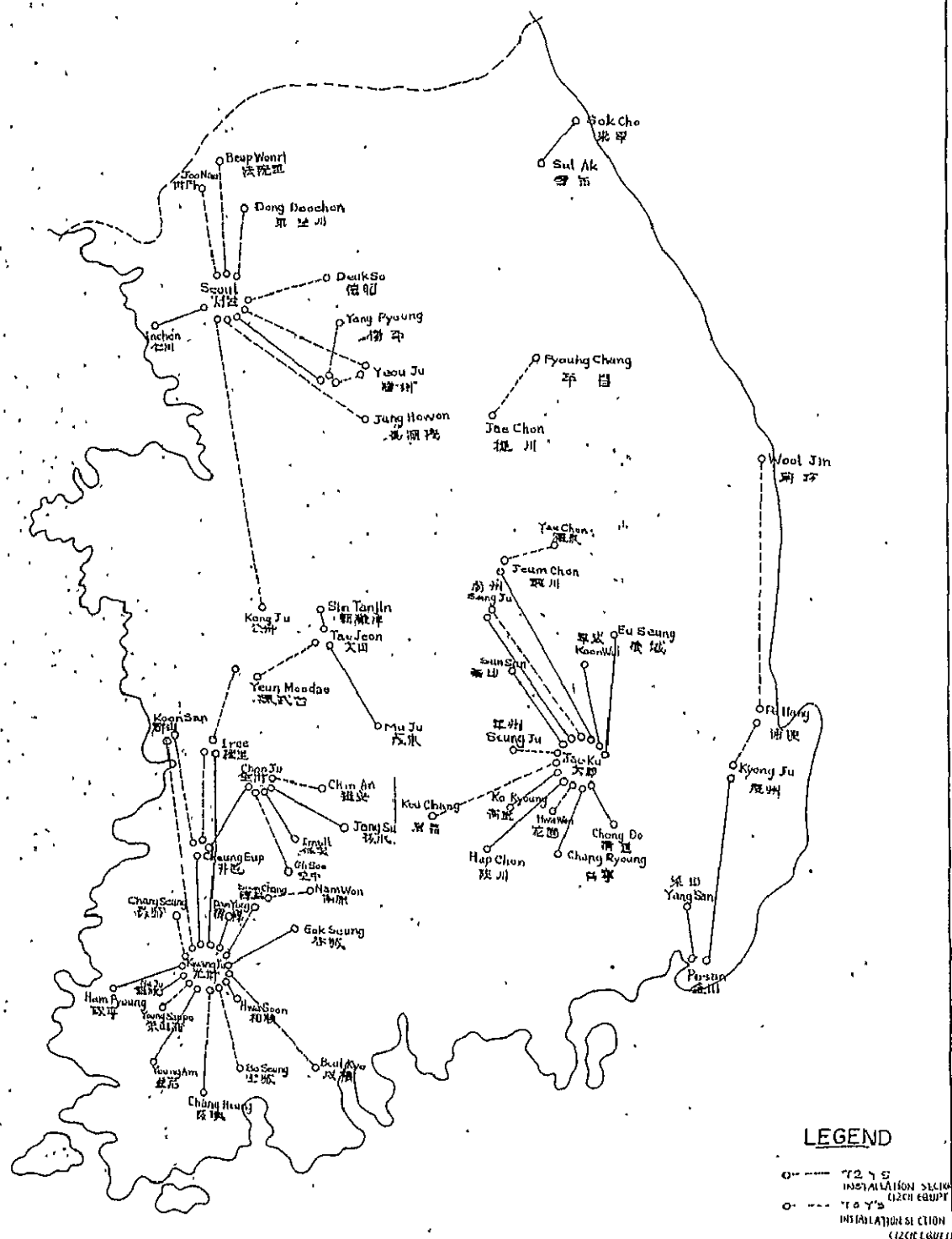
### LEGEND





# The Expansion Layout of OpenWire Carrier Equipment in 3rd 5year Plan(1972-1973)

1972/3 Installation Sections			73/3 Installation Sections		
Pror	Inter-Sections	CH	Pror	Inter-Sections	CH
1	Seoul-Ichon	12	1	Seoul-Yeo Ju	12
2	Tae Jeon - Mu Ju	12	2	Seoul-Kong Ju	12
3	Chon Ju-Cheung Eup	12	3	Chon Ju-Chin An	12
4	Chon Ju-Ingil	12	4	Kwang Ju-Koon San	12
5	Chon Ju-Jang Su	12	5	Kwang Ju-Chang Seung	12
6	Kwang Ju-Ireo	12	6	Kwang Ju-Bo Seung	12
7	Kwang Ju-Hwa Sooh	12	7	Kwang Ju-Soon Chang	12
8	Kwang Ju-Na Ju	12	8	Kwang Ju-Chung Heung	12
9	Kwang Ju-Dam Yang	12	9	Tae Ku-Ku Chang	12
10	Kwang Ju-Ham Pyoung	12	10	Tae Ku-Sang Ju	12
11	Kwang Ju-Young Am	12	11	Tae Ku-Seung Ju	12
12	Kwang Ju-Gok Seung	12	12	Ichon-Yeo Ju	12
13	Kwang Ju-Chung Eup	12	13	Ichon-Yang Pyoung	12
14	Pusan-Kyoung Ju	12	14	Koon San-Chung Youp	12
15	Pusan - Yang San	12	15	Cheung Yeop-Ireo	12
16	Tan Ki-Chang Ryong	12	16	Nam Won-Soon Chang	12
17	Tae Ku-Hap Chon	12	17	Non San - Ireo	12
18	Tae Ku-Song Ju	12	18	Jae Chon-Pyang Chang	12
19	Tae Ku-Ui Seung	12	19	Kyoung Ju-Pa Hang	12
20	Tae Ku-Koon Wui	12	20	Jeum Chon-Yae Chon	12
21	Tae Ku-Ga Ryong	12	21	Pa Hang-Wool Jin	12
22	Tae Ku-Jeum Chon	12	22	Seoul-Jang Hwon	12
23	Poa Ku-Chang Do	12	23	Seoul-Beup Wonri	12
24	Tae Ku-sun Sun	12	24	Seoul-Joo Nau	12
25	Gok Cho-Sul Ak	12	25	Seoul-Deuk So	12
			26	Seoul-Dong Daechon	12
			27	Tae Jeon-Yeun Maedae	12
			28	Tae Jeon-Sin Tanjin	12
			29	Chon Ju-Oh Soo	12
			30	Kwang Ju-Young San po	12
			31	Kwang Ju-Beul Kyo	12
			32	Tae Ku-Hwa Won	12
Total	25 Sections	300	Total	32 sections	384





# The Expansion Layout of Open Wire Carrier Equipment in 3rd 5year Plan(1974-1976)

1974 y's Installation Sections

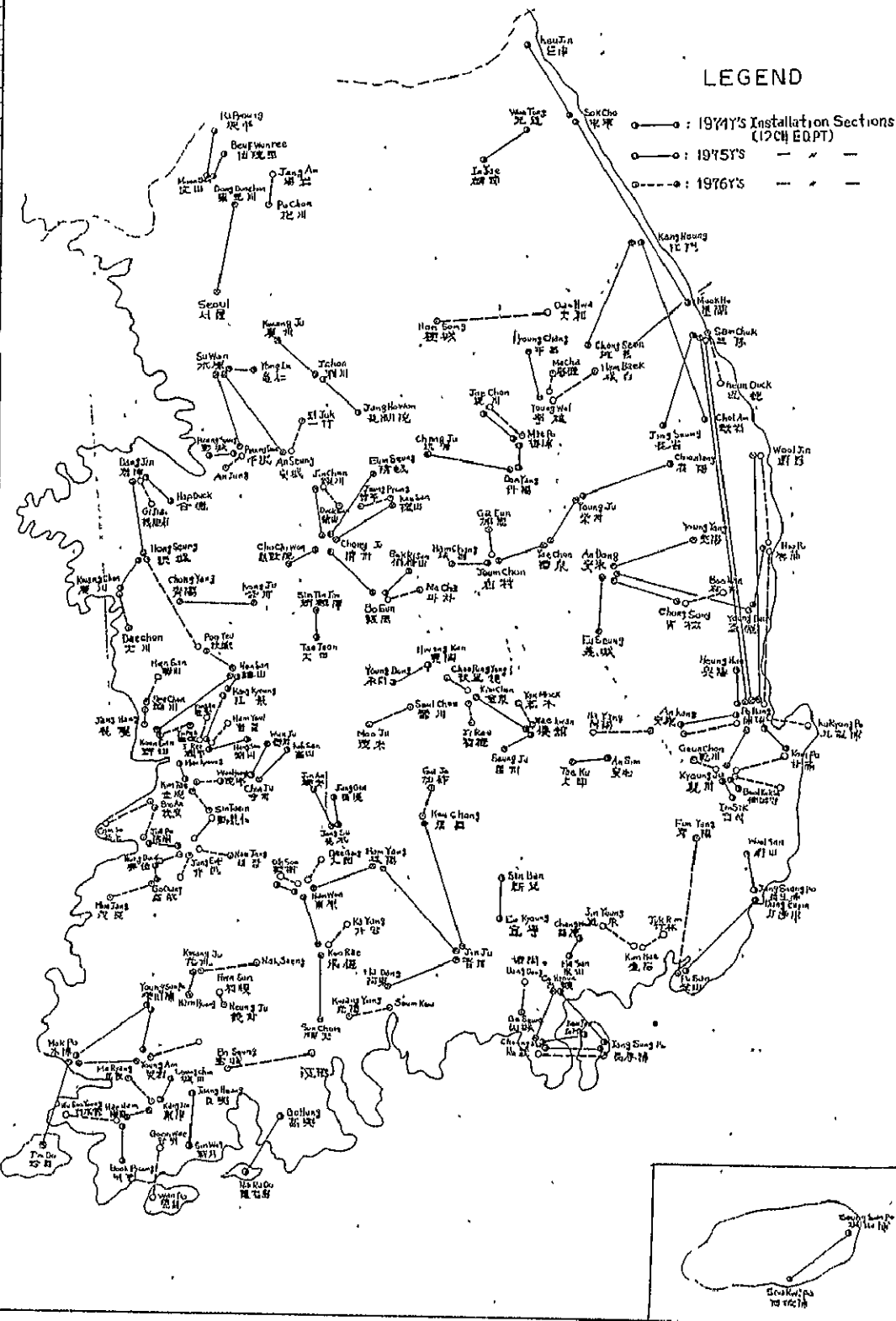
Prior 17	Inter Sections	CH	Prior 17	Inter Section	CH
1	Kang Hwang - Choi Am	12	23	Gollung - Na Rado	12
2	Hong Seung - Gwang Chon	12	24	Young Am - Young Saepo	12
3	Mok Po - Young Saepo	12	25	Jang Hwang - Sin Wol	12
4	Ha Sa - Chang Won	12	26	Hae Nam - Book Young	12
5	Maon San - Bup Wunee	12	27	Sau Kwipo - Seung Saepo	12
6	Maon San - Pa Pyoung	12	28	Kyoung Ju - Boal Kuk sa	12
7	Tchen - Jang Hwan	12	29	Kyoung Ju - Imsik	12
8	Pyoung Tack - Paeng Seung	12	30	Young Duck - Hoo Po	12
9	Sam Chuk - Jang Seung	12	31	Young Ju - Choon Yang	12
10	In Jae - Won Tong	12	32	Jeum Chon - Ham Chang	12
11	Bo Eun - Sokri San	12	33	Po Hang - Kan Po	12
12	Dan Yang - Mae Po	12	34	Po Hang - An Kang	12
13	Young Dong - Hwang Kan	12	35	Po Hang - Heung Hae	12
14	Jae Chon - Mae Po	12	36	Go Hyoun - Jang Sung po	12
15	Non San - Kang Kyoung	12	37	Wan San - Jang Seun po	12
16	Dang Jin - Hap Duck	12	38	Pu San - Bang Eun	12
17	Kim Jae - Man Kyoung	12	39	Choon Moo - Jang Sung po	12
18	Free - Kang Kyoung	12	40	Choon Moo - Hui Joo	12
19	Free - Nang San	12	41	Eu Kyoung - Sin Ban	12
20	Jeung Eup - Jul Po	12	42	Sok Cho - Ken Jin	12
21	Jang Soo - Jang Goo	12	43	Sok Cho - Mook Ho	12
22	Kang Jin - Seung chon	12	TOTAL	43 Sections	516

## 1975 y's Installation Sections

Prior 17	Inter Sections	CH	Prior 17	Inter Sections	CH
1	Suwon - Yong In	12	24	Sam Chuk - Po Hang	12
2	Suwon - Pyoung Tack	12	25	Jin An - Jang Goo	12
3	Suwon - An Seung	12	26	Nam Won - Koo Rae	12
4	Kang Hwang - Chong Seun	12	27	Nam Won - Ham Yang	12
5	Seon Chulim - Koo Rae	12	28	Hae Nam - Kang Jin	12
6	Mok Po - Young Am	12	29	Non San - Koon San	12
7	Mok Po - Jin Do	12	30	Non San - Poo Yoo	12
8	Hong Seung - Tang Jin	12	31	Kong Ju - Chong Yang	12
9	Chong Ju - Cho Chiwon	12	32	Wae Kwan - Seung Ju	12
10	Chong Ju - Jin Chon	12	33	Chung Moo - Ka Hyan	12
11	Chong Ju - Eun Seung	12	34	Kyoung Ju - Pa Hang	12
12	Chong Ju - Bo Eun	12	35	Kim Chon - Wae Kwan	12
13	Chong Ju - Koo San	12	36	Young Ju - Yoo Chon	12
14	Chong Ju - Dan Yang	12	37	Jeum Chon - Yoo Chon	12
15	Chon Ju - Ha Dong	12	38	Po Hang - Sam Chuk	12
16	Chon Ju - Koo Chang	12	39	Po Hang - Wol Jin	12
17	Jin Ju - Ham Yang	12	40	Seoul - Dong Dooch	12
18	Ali Dong - Eu Seung	12	41	Tae Jeon - Sin Tan Jin	12
19	An Dong - Chong Seung	12	42	Chon Ju - Wun Ju	12
20	An Dong - Young Yang	12	43	Chon Ju - Kori San	12
21	An Dong - Young Duck	12	44	Kwang Ju - Nam Pyoung	12
22	Tchen - Kwang Ju	12	45	Tae Ku - An Sun	12
23	Young Wol - Pyoung Chong	12	TOTAL	45 Sections	540

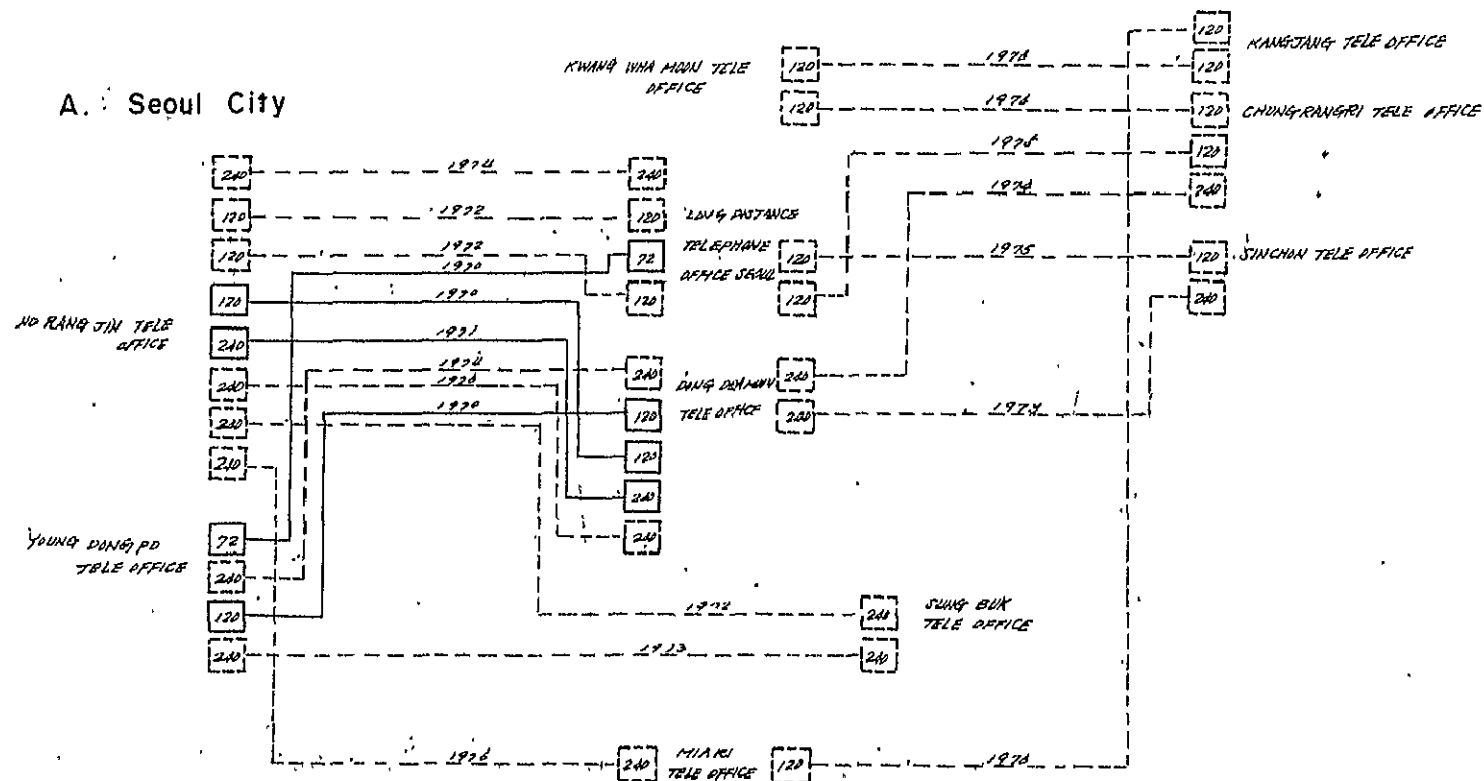
## 1976 y's Installation Sections

Prior 17	Inter Sections	CH	Prior 17	Inter Sections	CH
1	Kwang Ju - Nak Seung	12	32	Jeung Eup - Young Wol	12
2	An Seung - Il Juk	12	33	Jeung Eup - Hong Duck	12
3	Kyoung Ipek - An Jung	12	34	Kang Jin - Ma Ryang	12
4	Pa Chon - Jang Am	12	35	Bo Seung - Hui Kyo	12
5	Sam Chuk - Kyoung Duck	12	36	Young Am - Seu Ho	12
6	Young Wol - Ma Cha	12	37	Wan Do - Goo Wae	12
7	Young Wol - Ham Back	12	38	Hae Nam - Wu Seou Young	12
8	Hae Seung - Dae Hwa	12	39	Hae Seon - Noun Ju	12
9	Goo San - Jang Pyoung	12	40	Kwang Yang - Seum Keu	12
10	Ho Eun - Ma Cha	12	41	Kyoung Ju - Geun Chon	12
11	Jin Chon - Duck San	12	42	Kyoung Ju - Goo Po	12
12	Jin Chon - Mae Po	12	43	Kyoung Ju - Ah Hwa	12
13	Geun Jin - Qi Jist	12	44	Kim Chon - Choo Pyoung	12
14	Dae Chon - Kwang Chon	12	45	Kim Chon - Ji Rae	12
15	Poo Yoo - Hong Seung	12	46	Young Chon - Ha Yang	12
16	Seu Chon - Jang Hang	12	47	Wan Jin - Hoo Po	12
17	Seu Chon - Han San	12	48	Wae Kwan - Yak Mook	12
18	Ge Chong - Moo Jang	12	49	Jeum Chon - Ga Eun	12
19	Ge Chong - Heung Duck	12	50	Chang Seung - Boo Nam	12
20	Koon San - Im Poo	12	51	Po Hang - Ku Ryong po	12
21	Kim Joo - Sin Taein	12	52	Po Hang - Hui Po	12
22	Kim Joo - Won Pyoung	12	53	Po Hang - An Kang	12
23	Nam Won - Dae Gung	12	54	Ku Chong - Goo Jo	12
24	Nam Won - Oh Goo	12	55	Ge Yang - Koo Rae	12
25	Moo Ju - Seoul Chon	12	56	Ge Seung - Dong Dong	12
26	Poo An - Goo So	12	57	Kim Hae - Jin Young	12
27	Poo An - Gul Po	12	58	Kim Hae - Juk Rim	12
28	Free - Ham Yool	12	59	Pusan - Eun Yang	12
29	Jeung Eup - Sin Taein	12	60	Choon Moo - Jang Seung po	12
30	Free - Young An	12	TOTAL	60 Sections	717





A. Seoul City



91 1971 96 KAM HAE POST OFFICE  
 PUSAN LONG-DISTANCE TELEPHONE OFFICE 72 72  
 98 1971 98 GU PO CARRIER REPEATER STATION  
 240 1973 240 DANG REA TELE OFFICE  
 240 1973 240 IHE UN DAE TELE OFFICE  
 CHO RANG TELE OFFICE 240 1974 240  
 THE GU LONG-DISTANCE TELE OFFICE 140 1971 140 KYUNG SAN POST OFFICE  
 120 120 EAST TEA GU TELE OFFICE  
 KANG GU TELEPHONE OFFICE 240 1975 240  
 240 1972 240 SONG DUNG POST OFFICE  
 THE UN TELE OFFICE 240 1974 240 YU SUNG TELE OFFICE  
 MOKPO TELE OFFICE 91 1975 98 HINO POST OFFICE  
 1976

**LEGEND**  
 [ ] CARRIER EQUIPMENT NUMBER IS CHANNEL  
 - - - EXPANSION CARRIER TELEGRAPH EQUIPMENT

LEGEND

CARRIER EQUIPMENT IN HAND  
NUMBER IS CHANNELS

- [120] EXPANSION CARRIER  
TELEGRAPH EQUIPMENT

1972  
MAY 1972 YEAR INSTALLATION YEAR



# The Expansion Layout of Carrier Telegraph Equipment for Telex Net-Work in 3rd 5year Plan

(Unit: Channel)

Plan per year	1972	1973	1974	1975	1976	TOTAL
Inter-Sections						
Tae Jeon - Seoul	120	96	90	160	124	590
Tae Jeon - Pusan	48	48	48	48	72	264
Tae Jeon - Tae Gu	48	48	48	48	72	264
Tae Jeon - Kwang Ju	48	48	48	48	72	264
Tae Jeon - Chon Ju	36	24	24	24	60	168
Other Inter-Sections		36	36	32	80	184
Total	300	300	300	560	480	1,740

